# ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

ಹಿರಿಯ ಸಹಾಯಕ ನಿದೇರ್ಶಕರು (ಶಿಕ್ಷಣ) ರವರ ಕಛೇರಿ ಎನ್.ಆರ್.ವೃತ್ತ, ಬೆಂಗಳೂರು–02.

ಸಂಖ್ಯೆ: ಹಿ.ಸ.ನಿ.(ಶಿ)/ಪಿಆರ್/ಇ–73339/2024–25 ದಿನಾಂಕ: 31–01–2025

## ಪಾಲಿಕೆಯ ಶಾಲಾ/ಕಾಲೇಜುಗಳಲ್ಲಿ ಸ್ಮಾರ್ಟ್ ಪ್ಯಾನಲ್ ಗಳನ್ನು ಅಳವಡಿಸುವ ಸಂಬಂಧ ಆಹ್ವಾನಿಸಲಾಗಿರುವ ಟೆಂಡರ್ ನಲ್ಲಿನ ಸ್ಮಾಟ್ ಪ್ಯಾನಲ್ ನ ಪರಿಷ್ಕೃತ ನಿರ್ದಿಷ್ಟತೆ

| Sl.No. | Parameter | Specifications |
|---|---|---|
| 1 | Display Panel Diagonal size | 65",75",86" |
| 2 | Software | The touch interactive Android display shall have inbuilt onboard writing software. Thus, this software shall has the capability to write something on the display and store in on-board system even. WITHOUT any PC/Laptop/External or internal add on devices. |
| | | The display must have the facility of send the written contents by mail without using any external devices. |
| | | The display must have the facility of store writing contents in the pen drive. |
| | | This software which is embedded in the On-Board system shall have capability to write (Annotate) on top the contents that are shown from pen drive. |
| | | To achieve those functions, The touch interactive display shall have inbuilt onboard smart android 8.0 or better. |
| 3 | Internet access | The touch interactive display must have inbuilt WiFi-So that the presenter shall visit the internet to show/access the content / information even without PC/LAPTOP |
| 4 | Display technology | Direct Backlit LED-IPS Panel/VA |
| 5 | Display Ratio | 16:09 |
| 6 | Resolution | 3840 × 2160 |
| 7 | Display Colour | 1.07 Billion |
| 8 | Brightness | 500Cd/m2 + /- 50Cd/m2(nits) |
| 9 | Viewing Angle | 178 or better viewing angle |
| 10 | Response Time | Not more than 5 ms |
| 11 | Display warranty | 30,000 hour or 3 years which ever is earlier |
| **Touch Interactive Display – Audio System** | | |
| 12 | Speakers | Should be Seamlessly built –in the display |
| 13 | No. of speakers and Max Power Output | Touch Interactive Display shall have minimum of 2 speakers with the power of each speaker at 20 Watts or above |
| 14 | Speaker Position | Seamlessly mounted in lower side of the display. Front facing. Forward through |
| **Touch Interactive Display - Touch Technology** | | |
| 15 | Deployment of Touch Technology Thickness of the touch glass | Advanced Infrared |

| | | |
|---|---|---|
| 16 | Thickness of the touch glass | 4mm Toughened Glass |
| 17 | Surface technology | Anti-Glare |
| 18 | Touch accuracy | 1mm |
| 19 | Touch Sensor | Infrared or Capacitive |
| 20 | Touch Points in Windows | Must have a touch capability of minimum 20 points |
| 21 | Writing Tool | Shall use with stylus pen or finger |
| 22 | Number of Stylus supplied with Int. Display | 2 |
| **Touch Interactive Display Connectivity Ports** | | |
| 23 | Ports | USB2.0 1, USB3.0 *4, HDMI IN 2.0*2, OPS (Optional) *1, LAN RJ45-2, RS232 IN 1, Audio OUT 1, PC-Audio IN *1, VGA 1, |
| **Touch Interactive Display - Handheld Remote Control** | | |
| 24 | Technology | Infrared |
| 25 | Battery Type | AAA Cell |
| 26 | On Board Operating System | Touch Interactive Display shall have better Operating System which shall be coded with any latest programs like Android 8.0 or better |
| 27 | Onboard System's CPU | ARM A73+A53 Quad Core 1.5GHz or higher, |
| 28 | Onboard System's RAM | 4GB/8GB |
| 29 | Onboard System's ROM | 16GB/32GB |
| 30 | Onboard system Android(Or equivalent) Version support | 8.0 or anything Latest |
| 31 | Multimedia File Formats Supported | Support all major commonly used types of multi-media files |
| 32 | GUI - Graphic User Interface | The display must have GUI for ease access of resources, functions and shortcuts. This GUI shall be any proprietary OS but shall be compatible with Android coding. Or any such OS |
| 33 | White Board feature | he touch interactive display shall have white board function for seamless writing without any connectivity of computing devices This white board function shall have minimum features of selecting different colors of pen, highlighter and sizes. The redo and undo function also shall add additional comfort to the presenter with eraser function. Preferably gesture action for eraser shall enhance the convenient of presentation, |
| **OPS in slot** | | |
| 34 | OPS | Interactive display must have OPS in slot |
| **Touch Interactive Display System Safety** | | |
| 35 | Mounting Capabilities | Display must have facility to mount on floor stand or wall brackets |
| 36 | BIS and CE Approval | Proposed Product must have BIS and CE certification. And Attach the copy as proof. |
| 37 | Suitable wall mount kit with accessories | Equipment has to be supplied with suitable wall mount kit and accessories |
| 38 | Installation | Horizontal/ Vertical installation |

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|---|---|---|
| 1. | Digital Content | Multimedia Content Mapped with NCERT/State for Class 1 to X in English and Kannada medium in subjects like English, Math, Science and Social Science content. |

| Speaker cum Mic | | |
|---|---|---|
| S.No | Parameter | Specification |
| 1 | Audio Technology | The system should have a DSP based Echo Cancellation>-65dB with echo tail of 500ms or better and bi Directional noise suppression of >-18dB or better |
| 2 | Audio | It should have a frequency response of 20Hz-16KHz or better with a Microphone coverage of 3m, 360 degrees or better with 4 Integrated microphones. It should cover upto 5m or more with the help of 2 external microphones which can be extended with cables for larger room coverage. |
| 3 | Audio Output | The Speaker volume should be 92dB or better. |
| 4 | Audio For USB VoIP Network | It should have a Microphone and Speaker frequency band of 100Hz to 16KHz or better |
| 5 | Ports | It should have USB port for Skype calling. |
| 6 | Buttons | It should have Mute Indicator and Numbers, Mute Mic, Mute Speaker, Vol Up/Down or more. |
| 7 | Features | It should support AEC, AGC, NLP, Noise reduction or better |
| 8 | Certifications | It should have CE & latest CB Certification and also CB Test Reports to be submitted. |

| PTZ camera 12 X | | |
|---|---|---|
| S.No | Parameter | Specification |
| 1 | Sensor | The camera sensor should be 1/2 .8 inch high quality 2 mp HD CMOS sensor or Better |
| 2 | White Balance | The camera should have an Option of Auto or Manual White Balance. |
| 3 | Gain | The camera should have an auto Gain Control |
| 4 | Back Light Compensation | The camera should have a selectable Back-light compensation |
| 5 | Noise Reduction | 2D & 3D or better |
| 6 | S/N ratio | The camera should have a S/N Ratio of >55db. |
| 7 | Zoom | The camera should have a 12x optical zoom and 16xdigital zoom or better |
| 8 | Interface | The camera should have a standard Video Output and should support HDMI/DVI Ports so that Camera can be integrated with standard End Points |
| 9 | RJ-45 | It should have atleast 1 RJ-45 Port for IP Camera functions. |
| 10 | Signal Support | The camera should support 1080p@60fps |
| 11 | Control Port | The camera should have an RS 232 port for Communication |
| 12 | Presets | The camera should have at least 150 Position Presets |
| 13 | Field Of View | The camera should have 72.5 Degree or better field of view |
| 14 | Pan Range | he camera should have a Pan Rotation Angle of -170 degrees to +170 Degrees or better |

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|---|---|---|
| 15 | Tilt Range | The camera should have a Tilt Rotation Angle of -30 degrees to 90 degrees or better |
| 16 | Accessory | The camera should be supplied with IR remote control as an included accessary. Along with celling mount kit. |
| 17 | Certifications | It should have CE & latest CB Certification and also CB Test Reports to be submitted. |

## UPS Model Technical specifications

| | Items | Specifications UPS-1 KVA 1Hr backup |
|---|---|---|
| 1. | Type | **Online Single Phase input & single Phase output** |
| 2. | Capacity | 1 KVA |
| 3. | Backup Time | 1Hour |
| 4. | Input Frequency | 50 Hz +/- 5% |
| 5. | Input Voltage | 160v -270V |
| 6. | Output Voltage | 230v +/- 0.2 Hz |
| 7. | Output Frequency | 50 Hz +/- 0.2 Hz |
| 8. | Input Power Factor | 0.90 |
| 9. | Output Power Factory | 0.8 lag to unity PF |
| 10. | Waveform | Pure sine wave |
| 11. | Alarm | On Battery Low Battery UPS Over Load |
| 12. | Technology | IGBT based PWM technology with isolation transformer |
| 13. | Battery Make | Preferred Brands: Panasonic/Southem/Prime/Racket/YUASA/Exide/CSB/Amaron/Relicell/SF Sonic (ISO/TUV Certified) //RAION Lithium /Emercion RAYS/ Sakti Accumulators |
| 14. | Battery type | Please specify |
| 15. | Battery AH | Please specify |
| 16. | No of Batteries | Please specify |
| 17. | DC Voltage (Input) | Please specify |
| 18. | VAH | >1600 VAH |
| 19. | Over load Capacity | 150% for 1 Minute, 125% for 10 Minutes |
| 20. | Inverter efficiency | 90% |
| 21. | Overall Efficiency | 90% |
| 22. | Crest Factor | 3:1 |
| 23. | Regulation | +/-1% |
| 24. | THD | <2% |
| 25. | Protection | Automatic discharge protection with self test features, Overload Surge protection, Input fault, Cold start, Low Battery, Battery Over charge, output short circuit, Charging current circuit, inverter over temperature |

| | | |
|---|---|---|
| 26. | LCD Display | Output Voltage, Output Current, Load %, output frequency, Input voltage, Battery voltage |
| 27. | Certification | ISO 14001:2015 9001:2015 45001:2018<br>BIS CERTIFICATION |

Note. 1. Column No: 14,15,16,17 it should be filled by the vendor as per their UPS design and match the VAH.

31/1/25

ಹಿರಿಯ ಸಹಾಯಕ ನಿರ್ದೇಶಕರು (ಶಿಕ್ಷಣ)
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ